

CLAIMS

1. A method of transferring a message between a plurality of nodes forming a ring, comprising the steps of:

5 generating a message containing a value specifying a short path and an identifier identifying a source node of said message when the path for said message is a short path;

 generating a message containing a value
10 specifying a long path and an identifier identifying a destination node of said message when the path for said message is a long path; and

 transmitting said generated message.

2. A method according to claim 1, wherein said
15 message consists of K1/K2 bytes, and said source node identifier and said destination node identifier are both 8 bits long.

3. A method of transferring a message between a plurality of nodes forming a ring, wherein each pair of
20 adjacent nodes forms a group and any two adjacent nodes have node identifiers different from each other, said method comprising the steps of:

 generating a message containing a group
25 identifier identifying the group to which a destination node of said message belongs, a group identifier identifying the group to which a source node of said message belongs, and a node identifier identifying said destination node of said message; and

 transmitting said generated message.

4. A method according to claim 3, wherein said
30 message consists of K1/K2 bytes, and said destination node identifier is one bit long.

5. A method of transferring a message between a plurality of nodes forming a ring, wherein a first node
35 identifier and a second node identifier are assigned to each node, and each node is uniquely identified by a combination of the first node identifier assigned to said

node and two second node identifiers respectively assigned to two nodes adjacent on both sides thereof, said method comprising the steps of:

5 generating a message containing one of the first and second node identifiers assigned to a destination node of said message, the other one of the first and second node identifiers assigned to a source node of said message, and a value specifying a short path or a long path; and

10 transmitting said generated message.

6. A method according to claim 5, wherein said message consists of K1/K2 bytes.

7. An apparatus for transferring a message between a plurality of nodes forming a ring, comprising:

15 means for generating a message containing a value specifying a short path and an identifier identifying a source node of said message when the path for said message is a short path;

20 means for generating a message containing a value specifying a long path and an identifier identifying a destination node of said message when the path for said message is a long path; and

 means for transmitting said generated message.

25 8. An apparatus according to claim 7, wherein said message consists of K1/K2 bytes, and said source node identifier and said destination node identifier are both 8 bits long.

30 9. An apparatus for transferring a message between a plurality of nodes forming a ring, wherein each pair of adjacent nodes forms a group and any two adjacent nodes have node identifiers different from each other, said apparatus comprising:

35 means for generating a message containing a group identifier identifying the group to which a destination node of said message belongs, a group identifier identifying the group to which a source node

of said message belongs, and a node identifier identifying said destination node of said message; and means for transmitting said generated message.

- 5 10. An apparatus according to claim 9, wherein said message consists of K1/K2 bytes, and said destination node identifier is one bit long.

- 10 11. An apparatus for transferring a message between a plurality of nodes forming a ring, wherein a first node identifier and a second node identifier are assigned to each node, and each node is uniquely identified by a combination of the first node identifier assigned to said node and two second node identifiers respectively assigned to two nodes adjacent on both sides thereof,
15 said apparatus comprising:

- means for generating a message containing one of the first and second node identifiers assigned to a destination node of said message, the other one of the first and second node identifiers assigned to a source
20 node of said message, and a value specifying a short path or a long path; and

 means for transmitting said generated message.

- 25 12. An apparatus according to claim 11, wherein said message consists of K1/K2 bytes.